

ORNITHOLOGICAL LITERATURE

THE ORIGIN OF BIRDS. By Gerhard Heilman. D. Appleton & Co., New York. 1927. Pp. 1-209. Figs. 1-142 and frontispiece (2 in color). Price, \$7.50.

This profusely illustrated work is the most recent contribution to the subject of avian ancestry. Part I includes a detailed study of *Archaeopteryx* and *Archaeornis*, especially the latter which the author had opportunity to study directly; and of *Ichthyornis* and *Hesperornis*. The conclusion is that on the basis of the skeleton alone *Archaeornis* is strictly reptilian. Part II is a comparison of avian and reptilian embryology. Part III is a theoretical application of the facts to form a phylogenetic explanation of birds. The final sentence runs thus, "In this way the reptile, through millions of years and innumerable generations, has been changed into a bird." The author's "this way" is far from clear and sufficient to the reviewer, but we know of no better presentation of the data.

We make this tardy reference to this work because the remainders have been acquired by the Union Library Association (118-120 East 25th St., New York) and are being sold at \$1.98 postpaid.—T. C. S.

VERTEBRATE NATURAL HISTORY OF A SECTION OF NORTHERN CALIFORNIA THROUGH THE LASSEN PEAK REGION. By Joseph Grinnell, Joseph Dixon, and Jean M. Linsdale. Univ. Calif. Publ. in Zool., Vol. 35, pp. i-v+1-594, figs. 1-181. Price, \$6.00.

This extensive report on vertebrate fauna covers a rectangular area lying about east and west across the eastern half of the northern quarter of the state, and including the Lassen Volcanic National Park. Field notes by ten observers and collectors, besides the authors, are used in the report. Again in this instance Miss Annie M. Alexander appears as the patron of the Museum of Vertebrate Zoology, under whose auspices the work was carried out. The text deals with the terrestrial vertebrate fauna, including 11 species of amphibians, 20 species of reptiles, 257 species of birds, and 99 species of mammals. The analysis of habitats as presented in this paper is particularly interesting and helpful. The numerous illustrations are of excellent quality and pleasing to the eye. It is a noteworthy publication.—T. C. S.

THE WOODPECKERS OF OKLAHOMA. By Edward Drane Crabb. Publ. Univ. Okla., Vol. II, No. 3, pp. 105-158, pls. 1-IV. 1930. Price, 75 cents.

Fifteen forms of woodpeckers are described as inhabiting Oklahoma, and one additional extirpated form, namely, the Ivory-billed Woodpecker, is listed. Not all of the fifteen woodpeckers discussed are known to nest in Oklahoma, however. It is reported that Red-headed Woodpeckers had been killed by poisoned grain placed to kill prairie dogs. A typographical error credits 100 genera of woodpeckers to North America, instead of 10. Under the topical heading "Description of Species" the author discusses not only the taxonomic characters, but also breeding and feeding habits, behavior, ecology, etc. This report does for the south-central part of the country about what was done for the northwestern corner by Neff's study of the woodpeckers of Oregon. Crabb's paper is issued by the Biological Survey of the State of Oklahoma.—T. C. S.